CLAIMS

1. An adhesive-carrying porous film for use as a battery separator, which comprises:

a substrate porous film such that when a probe of a probe penetrating thermomechanical analyzer, said probe having a diameter of 1 mm, is placed on the porous film under a load of 70 g to measure a thickness thereof while heating the porous film from room temperature at a rate of 2°C/minute, a temperature at which the thickness of the porous film decreases to a half of the thickness of the porous film when the probe was initially placed thereon is 200°C or more; and

a partially crosslinked adhesive carried on the substrate porous film, the partially crosslinked adhesive being prepared by reacting a reactive polymer having a functional group capable of reacting with an isocyanate group therein with a polyfunctional isocyanate so that the reactive polymer is partially crosslinked.

2. The adhesive-carrying porous film according to claim 1, wherein the substrate porous film is prepared from a polyolefin resin composition comprising a polyolefin resin having a weight average molecular weight of at least 500000 and a crosslinked product of a cross-linkable rubber having double bonds in the molecular chain.

3. The adhesive-carrying porous film according to claim 1, wherein the reactive polymer has carboxyl groups or hydroxyl groups as the functional group capable of reacting with an isocyanate group.

4. The adhesive-carrying porous film according to claim 1, wherein the partially crosslinked adhesive has a gel fraction in a range of 5 to 80%.

5. The adhesive-carrying porous film according to claim 2,

wherein the cross-linkable rubber is an ethylene-propylene-ethylidene norbornene ternary copolymer.

6. The adhesive-carrying porous film according to claim 2, wherein the cross-linkable rubber is a polynorbornene.

7. An electrode/porous film laminate comprising an electrode press-contacted to the adhesive-carrying porous film according to any one of claims 1 to 6.

8. An electrode/porous film adherend comprising an electrode bonded to a porous film prepared by reacting a reactive polymer in the electrode/porous film laminate according to claim 7 with a polyfunctional isocyanate and further crosslinking a partially crosslinked adhesive.

9. A method of manufacturing a battery which comprises: charging the electrode/porous film laminate as claimed in claim 7 into a battery container and then pouring an electrolytic solution containing a polyfunctional isocyanate therein into the battery container; and heating the laminate to react an unreacted reactive polymer in the partially crosslinked adhesive carried on the porous film with the polyfunctional isocyanate to further crosslink the reactive polymer thereby bonding the electrode to the porous film to form an electrode/porous film adherend and obtaining a battery which has as a separator the porous film in the electrode/porous film adherend thus formed.

10. A battery which is obtained by charging the electrode/porous film laminate as claimed in claim 7 into a battery container and then pouring an electrolytic solution containing a polyfunctional isocyanate therein into the battery container, and heating the laminate to react an unreacted reactive polymer in the partially crosslinked adhesive carried on the porous film with the polyfunctional isocyanate to further crosslink the reactive polymer

thereby bonding the electrode to the porous film to form an electrode/porous film adherend and obtaining a battery which has as an electrode/separator adherend the electrode/porous film adherend, wherein the porous film is made of a polyolefin resin composition comprising a polyolefin resin having a weight average molecular weight of at least 500000 and a crosslinked product of a cross-linkable rubber having double bonds in the molecular chain.